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252 sticks laid side by side or on a cloth, and when dry was rolled in a bundle. This was called mĭl,pŏk, "spread," or hama'nk, "pruned; trimmed off." The head proper was eaten without mashing. The prepared mescal could be soaked in water and [272] chewed on, or the foamy sweet liquor drunk.

Tule pollen and roots formed a most minor food. A child play- [222] ing or a hunter would pause to strip the pollen off in his hand and swallow it. Women gathered it occasionally. They broke the heads off gently so as not to shake out the light pollen, holding a basket beneath to catch the heads. Using a large pot placed on its side for protection against the wind, the heads were shaken out inside it. The pollen was poured into the basket, which was rocked from side to side to bring the chaff to the top. A sweet mush was made of this pollen mixed with a little ground wheat. [251] When they wanted to preserve it, a hole was made, sprinkled and patted, the pollen poured in layer by layer, each being sprinkled, and the whole covered with dirt. A little fire on top baked it cake-like by the next day. Sometimes the large roots of older tules were chewed. They might also be dried and ground to make a gruel. Tules are at'api'l.

[137] Sunflowers grew wild, but were not a foodstuff.

Travellers sometimes boiled the water-filled pulp of the barrel cactus (mĭltŏ't) with a little alkali.

222 The time when the giant cactus (sahuaro) fruit ripened, the middle of June, was eagerly welcomed, not because the fruit formed any considerable portion of the dietary but as an occa- [527] sion for celebration and debauch. The plant was not common in Maricopa territory proper, growing rather on the lower hill slopes north of the Salt River. Hence the desire to collect the fruit was spiced with the dangers incident to treading so close to Yavapai country. The Yavapai themselves descended from their mountains to gather it in the same area.

The fruit is ripe when it is red at the bud end. The few long spines it bears are at this end: these were readily plucked off [419] with the fingers. The fruit was gathered with a long hook: a pole (presumably a rib of this tree-like cactus) crossed obliquely near one end by a short stick to provide both a hook and crotch to

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work with.[6] Fruits that were fully ripe and open were allowed to remain until on drying the flesh dropped to the ground, when it might be gathered. Those that had not reached this stage were pulled from the plant. These were torn in two and eaten as they were. The fully ripened fruit sours in the summer heat. These were in consequence split and the flesh put into pots. As soon as they reached the river these were placed over a little fire so that the potful was brought nearly to the boiling point. The fruit would then keep; otherwise it soured in half a day. The unripe fruit, on the other hand, if carried about in a pot in this fashion, would simply become a watery mass. The fruit might be stored in this manner until winter, when it was dissolved in water for a drink, said to be very sweet, or strained through a cloth and boiled to syrup.

By preference however, the sahuaro harvest formed the basis of a jollification. If this was their intention, they forbade anyone gathering it until it ripened on the plant: nevertheless some did steal off to get it. They would boil it as above and set as many as one hundred large pots away in the meeting house to ferment. The boiling was done under a shade conveniently near. It was stored in the house while still hot, a little fire being maintained there to keep it warm. A man who was adept watched it for the two days required to ferment. When one potful fermented, he poured some of the contents into others, so that all would finish fermenting at the same time. Each family owned one to three of these potfuls, which they were called to carry home when ready.

Friends in other tribes were invited to dance at this time, saying that "Our store house is ripe." The guests came in a group slowly, camping at some distance from the village. The messenger who bore the invitations now walked out to the camp where he named those invited by each Maricopa, pointing out where he lived.

The method of handing out the drinks was stereotyped. The men invited would bring three or four friends. The host would send his wife into the house to bring out a cupful (a small pot or

[6] Curtis' description (II, 82) of a pole provided with a wooden blade was specifically denied by my informants.

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323 mesquite sticks was piled closedly over the group of pots, the sticks standing on end, and set fire (Pl. V). In two to two and a half hours it had burned sufficiently. Too much heat would burn the paint off the surface. The pots were fished out with a pair of sticks and a fine gruel of ground mesquite beans poured into them while they were still hot. This made them non-porous.[2]

323 531 Designs, which turned black on firing, were painted on the exterior (only ?) of the pots and bowls, using the chewed end of a little stick to apply a concoction of boiled black mesquite bark. The vessels were then fired a second time, being again placed on stones set in the coals. The fire was not built up for this, the vessels being only roasted. When the designs on one side had burned black, the vessels were turned over to bake the other side.

323 [843] A Kohuana woman said that whenever a pregnant woman touched a pot, it would crack in firing. She would say this to the little girls in sport as she chased them away.[3]

[381] A pot broken in firing was mended by rubbing the gum that exudes from the base of arrowweeds into the crack while the pot was still hot.

323 ●413 The anvil (niktadĭ'xkĭtco'g, "put underneath to mould") on which the vessel wall was beaten was a rounded flat stone, two to four inches in diameter, of a convenient size to hold in the left palm. Many preferred the lighter anvils made of clay, of which two types were in use. One was mushroom-shaped; its head some four inches across, the stem hollow. The edge of the head was recurved so as to avoid marring the pot. The other, like a tall narrow bowl with rounded base (about four inches high) was used in deep objects like cups (Pl. VII, *d*, *c*). The latter form is still in common use. Paddles were of three types. These were made of mesquite, a dense, heavy wood. The smaller (n,ĭ-maxŏ'mac), which tapers gradually to a handle, was somewhat curved both longitudinally and transversely. It was about eight inches long by three at its broadest (Pl. VII, *b*). Larger paddles

[2] There was no notion of ascribing inexhaustibility to them (cf. Spier, *Havasupai Ethnography*, p. 140).

[3] The Kamia belief that a jealous woman's touch would crack it does not occur.

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PLATE VII

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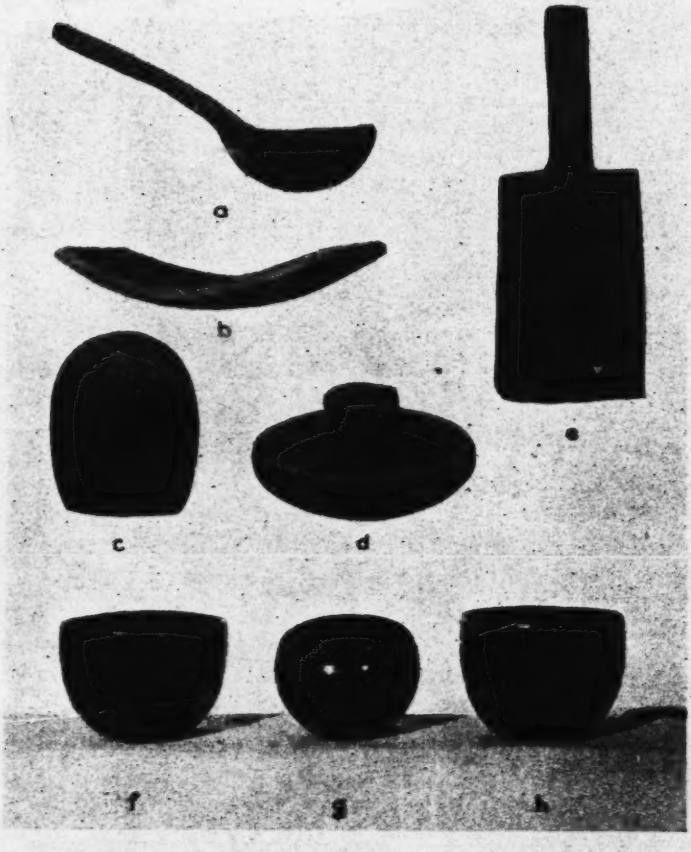

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POTTERY LADLE, POTTERS' TOOLS AND DECORATED POTTERY
(*a*, Ladle; *b*, *e*, paddles; *c*, *d*, anvils; *f*, *g*, *h*, Wash. State Mus. 2–11881, 11880, 11882)

[p. 108 A]

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his youth. It was, by my evidence, an old man's art, yet this observation that a young man wove or assisted may be true.

Cotton was alone used in weaving. Such possible substitutes as mountain sheep or dog hair were not used. Nor was sheep wool used since the advent of the whites: so far as I know, the Maricopa neither own sheep now nor had them formerly. The cotton cultivated in earlier days was white, not brown; growing on bushes waist-high or little more, and not like the man-high bushes of modern varieties of cotton grown in this district. It proved impossible to obtain any specimens of ancient cotton: it has entirely disappeared. Hrdlička observed (1905):

> According to information obtained from an old Maricopa, about forty years ago the people of his tribe planted native cotton, with which the men wove large decorated blankets.

They ginned the cotton by first beating it with a little stick. Then, spreading it on a flat stone, they rolled a smooth arrowweed across it to remove the seeds. This lap was layed aside; then others were similarly prepared and laid on the first. This was women's work alone. Day after day was spent in preparation until the necessary amount was accumulated.

The cleaned cotton was then spread on a smooth spot on the ground, over which clean sand had been sprinkled. A scraped arrowweed, about the size of an arrow, was strung to form a taut little bow. The bowstring was held close above the cotton and then plucked. The "tooth" of the string caught up the loose fibers; its vibration wrapped them into a compact roll around the string. This was then pulled off the string to serve as a sliver ready for spinning.[10] The first step was to roll the sliver into a loose yarn between palm and thigh.

[10] The cotton plucking bow must have had an interesting history in America: its ultimate source was Asia. My Maricopa informant ascribed its use to the Pima as well. He did not know whether the Papago had it. Doubtless they had, for, farther south Dr. Ralph Beals found it in 1931 in use among the Mayo (near the Rio Mayo and Navajoa, Sonora) for plucking wool fibers for spinning. The source for these tribes must have been the missions of northern Mexico. It occurs in South America, where Nordenskiöld records its distribution through the southern Amazon basin and southward. He writes: "We have here a cultural element that the Indians probably got from the Portuguese, presumably, as in the case of

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283 413 The spindle was a smoothed arrowweed shaft about two feet long and three-eighths of an inch in thickness. For the whorl, the inner part of the giant cactus was used, a dense wood. This was a straight stick about five inches long, one inch wide, and bored in the middle to slip on the shaft about six inches from its lower end. The lower end of the spindle was rounded; the upper end somewhat more pointed.[11]

283 The manipulation of the spindle consists simply in twirling it with the fingers of the right hand, the lower end resting on the ground, the pull of the left hand, holding the loose roving of cotton, giving the needed draft. From time to time the spinner stopped, unwound the partially spun yarn from above the whorl, tucked the spindle under his leg to hold it fast, and worked the yarn smooth between the nails of the right hand, before spinning again to give it further twist. An alternative method of spinning was to place the spindle with its lower end uppermost and resting on the right thigh; rolling it between the right palm and thigh, while the tip was supported in the cupped left hand. The Pima method of placing the lower end directly between the toes or in a wooden cup inserted between the toes was not in use.

Yarns intended for wefts were loosely spun, perhaps a quarter inch in diameter or more. Warp yarns had a tighter twist, hence a smaller diameter, to stand the excessive strain in the loom. Russell's description of Pima yarns applies here: [171]

> The warp is smoothly and evenly spun into a thread about 1 mm. in diameter. The woof threads are softer and about 3 mm. in diameter.

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[171] the pellet-bow, from India . . . . during the times of the Missions in the 17th and 18th centuries" (*Ethnography of South America*, p. 196). Of its occurrence in Asia, Laufer writes: "The method employed by the Chinese in preparing felt is the same as that used by the Tibetans, Mongols, and Turks, with a single exception: the first step they take is to loosen the wool by means of a large bow by tightening the string and jerking it off in rapid motion. This process is derived from that of treating cotton, and the bow in either case is identical" (*The Early History of Felt*, p. 7).

[11] The Pima spindle figured by Russell (*Pima Indians*, p. 149) is much the same, except that the cactus rib crosspiece is tied on. Bartlett observes that the Pima spindle is "a slender stick about two feet long passing through a block of wood" (*Personal Narrative*, II, 225).

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727 783 rāč'k): those who had slain an enemy, those who had taken scalps or captives, and the captives, the scalps, and their permanent keeper. The sentiment was not foreign in other fields of Maricopa thought. Eagle feathers were not casually gathered: they had to be purified by a shaman before they could be used. One had to tread softly, speak circumspectly, move slowly, where mountain sheep were concerned.

It is not wholly clear that such sentiments held with respect to all enemies. All references to the necessity for purification I gathered were to the Yavapai and Apache: not once during the more numerous references to the Yuma and Mohave was it mentioned. Unfortunately I neglected to direct questions to the point.

346 727 783 When the war party was ready to return from the mountains, one of the younger boys was sent ahead to carry news that they had killed the enemy. Some of the men at home then hastily built huts in preparation for their coming. These were close to the Gila at some distance from the village. They were like those built for the girls' puberty rites, with their openings always to the east. It was also essential that they stand in a row, but the direction of the row was immaterial. One hut was built for each man who had killed an enemy, taken his scalp, or made a captive.

727 783 Such men did not return with the main group of warriors, but followed. They walked slowly in single file and preserved an absolute silence. Sometimes the warriors ahead would try to scare them, to shake them from this course, but the killers always marched on slowly. Even when the whole group stopped for the night, these men camped at a distance.

[302] Before they started home, these men twisted their hair into a knot behind, and thrust into it some sharpened twigs of ivusĭ, a medicinal plant, as hairpins. Another such stick for a scratcher was stuck into the side hair. If they used their fingers, their [413] hands would get sore. This scratcher was about six inches in length: to the butt a bundle of feathers (for wiping the face) was [827] attached by a short willow bark cord. These men must not spit [753] on the ground but into the middle of a bush, because the spirit of the enemy was following and would breathe it up, causing them to fall sick.

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over her at this point in the proceedings, as they knew the Pima did. "We keep her just as quiet as we can. We do not make any noise around her." She was given very little food and then only pinole (a gruel of ground parched wheat); in earlier times mesquite bean gruel. She must particularly avoid meat and salt. She could not touch herself with her fingers: should she use them to touch her head, her hair would fall out. Instead she used a little stick, but could scratch only very lightly. This was prepared by her parents of arrowweed or mesquite. (It was not worn hung about the neck as elsewhere.) This was some six inches long; to the butt was attached by a short willow cord, a bundle of willow bark with which to wipe her face. Her head was plastered all over every night, thinking she might forget and touch her hair. On the first four nights, this was mud mixed with pounded black mesquite bark; on the second four, mud alone. Each morning, as she bathed, she washed this off, so that her hair would be dry before the sun rose. Her face up to the eyes was solidly painted a dark red. This was prepared by mixing red paint with the black liquor obtained by boiling mesquite bark. Her sole garment was a cotton skirt, newly made for the occasion. At the end of the period, it was thrown into the river, never burned. No ornaments were worn.

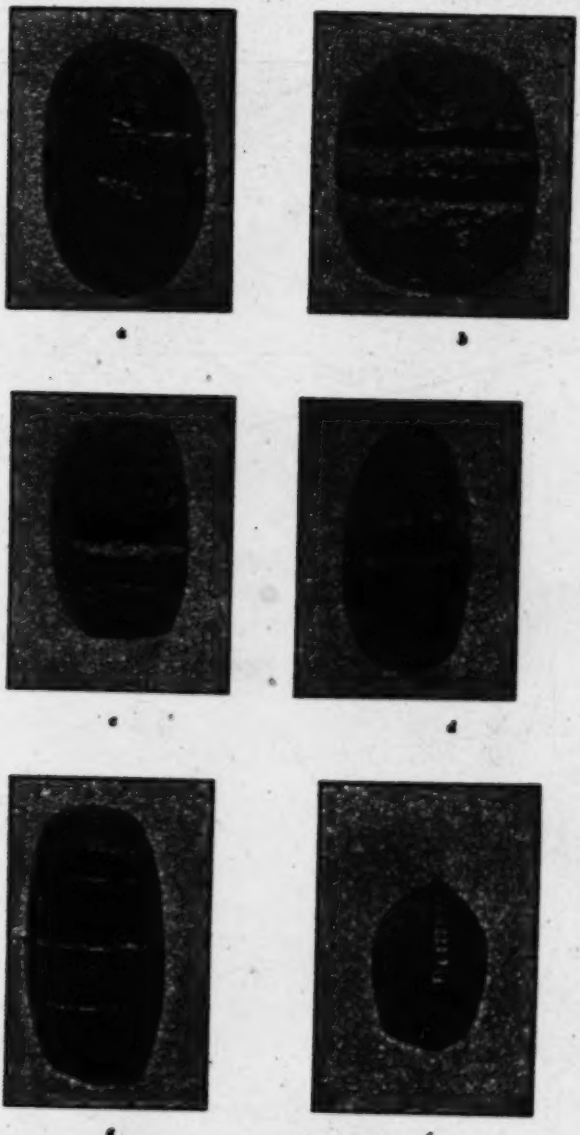
There is some difference of opinion as to the activities of this period. The old Halchidhoma, Kutox, stated that the girl had to run every morning before sunrise in order that she might learn endurance, to stand the heat, and run tirelessly on long journeys. She was accompanied by two good female runners, one on either side, but not holding her by her arms. For the first four mornings, they ran with her to the river where all three bathed; on the second four, they ran toward the east, returning with her to bathe again. During the second four days, she was subjected to "baking" (pa'vŭg, the word for baking food). She lay in a hollow in the sand outside the hut and was covered with sand. A fire had been previously built in this and the coals raked carefully away. There she lay until the sand cooled. The process began at mid-morning: she emerged about noon, when it was suffi-

2: Kroeber E-5 (ca. 1918) 1953

NS29 Yokuts NS29

SERRANO NS20
Western Mono NS25
River Yumans NT15
Diegueno US9

DRWYS 413



ARROW STRAIGHTENERS

a, b, Miwok; c, Yokuts; d, Cahuilla; e, Diegueño; f, Mohave (pottery)

[p. 530(A)]